

[Handwritten signature]



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,767	04/27/2005	Tomotada Kamei	2005_0731A	2691

513 7590 06/23/2006

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT	PAPER NUMBER
----------	--------------

2627

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/532,767	KAMEI, TOMOTADA	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/27/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 19 and 20 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 is confusing; as written, it appears to claim that the optical recording medium performs the act of recording the allowance value, when in actuality the Examiner believes the allowance value is stored on the optical recording medium.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2627

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15, 16, 17, 19, 20, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Udagawa et al. (US 6,967,914).

Regarding claim 15, Applicant's admitted prior art discloses (specification, pages 4-7):

a semiconductor laser (Fig. 19: 61);

a photodetecting element for receiving a part of light emitted from the semiconductor laser and converting the part of light into an electric signal corresponding to a light amount (Fig. 19: 72);

a laser driving circuit for inputting a driving signal into the semiconductor laser in such a manner that an average value of the electric signal coincides with a given target value (Fig. 19: 64);

a high-frequency superimposing circuit for superimposing a high-frequency signal over the driving signal (Fig. 19: 65); and

a high-frequency superimposing control section for controlling an amplitude of the high-frequency signal (Fig. 19: 65).

Applicant's admitted prior art does not disclose wherein the high-frequency superimposing control section controls the amplitude in such a manner that a peak-to-average ratio that is a ratio of a peak value of the electric signal with respect to the

Art Unit: 2627

average value of the electric signal does not increase above a given first reference value.

Udagawa discloses a method of controlling laser power in which the peak-to-average ratio that is a ratio of a peak value of the electric signal with respect to the average value of the electric signal does not increase above a given first reference value (Fig. 11. It checks that it is not above the reference value in step F106; that the ratio can be the peak-to-average ratio is disclosed in column 6, lines 11-21).

Udagawa discloses that this method always obtains the most appropriate laser power (column 2, lines 23-26).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the Applicant's admitted prior art wherein the high-frequency superimposing control section controls the amplitude in such a manner that a peak-to-average ratio that is a ratio of a peak value of the electric signal with respect to the average value of the electric signal does not increase above a given first reference value.

The motivation would have been to obtain the most appropriate laser power, as taught by Udagawa.

Regarding claim 16:

This is inherent to Applicant's admitted prior art in view of Udagawa. In the method taught by Udagawa the high-frequency superimposing control section further controls the amplitude in such a manner that the peak-to-average ratio does not decrease below a given second reference value equal to or lower than the first

Art Unit: 2627

reference value (Udagawa, Fig. 11: in Udagawa the first reference value and the second reference value are equal).

Regarding claim 17:

This is inherent to Applicant's admitted prior art in view of Udagawa; Udagawa teaches a peak detecting circuit for receiving the electric signal from the photodetecting element and for detecting the peak value of the electric signal (Udagawa Fig. 9: 25), and thus the high-frequency superimposing control section of Applicant's admitted prior art in view of Udagawa would calculate the peak-to-average ratio based on the peak value detected by the peak detecting circuit.

Regarding claim 19:

This is inherent to Applicant's admitted prior art in view of Udagawa. Because it keeps the peak to average ratio constant, the amplitude must decrease as the temperature of the semiconductor laser increases (the peak to average ratio is a function of the average value, temperature, and amplitude).

Regarding claim 20:

This is inherent to Applicant's prior art in view of Udagawa. Because it keeps the peak to average ratio constant, the amplitude must decrease as the average value increases if the average value is less than a given threshold value, and the amplitude must increase as the average value increases if the average value is larger than the threshold value (this is an inherent consequence of keeping the ratio constant).

Regarding claim 23:

Applicant's admitted prior art in view of Udagawa discloses a semiconductor laser driving device as noted above.

Applicant's admitted prior art in view of Udagawa does not disclose "wherein the high-frequency superimposing control section comprises a test executing section for judging the first reference value by recording a test pattern into a test recording area of the optical recording medium from which information is to be reproduced by use of the emitted light and which has the test recording area and by reading the test pattern while varying the amplitude."

Udagawa discloses a test writing operation (column 1, lines 25-40). Udagawa discloses that this determines the most appropriate laser power (column 1, lines 25-40).

It would have been obvious to one of ordinary skill in the art to include in Applicant's admitted prior art in view of Udagawa wherein the high-frequency superimposing control section comprises a test executing section for judging the first reference value by recording a test pattern into a test recording area of the optical recording medium from which information is to be reproduced by use of the emitted light and which has the test recording area and by reading the test pattern while varying the amplitude (Udagawa discloses test writing to set power directly, not the reference value, but it would be obvious to one of ordinary skill in the art that if one recording parameter can be set by test writing, so can others).

The motivation would have been to set the most appropriate reference value.

Regarding claim 24:

Applicant's admitted prior art in view of Udagawa discloses a semiconductor laser driving device as applied to claim 24 above.

Applicant's admitted prior art in view of Udagawa does not disclose "wherein the high-frequency superimposing control section further comprises: a reference value recording section for recording the first reference value judged by the test executing section into the optical recording medium; and a data acquiring section for reading out the recorded first reference value from the optical recording medium on which the first reference value is recorded."

The Examiner takes Official Notice that storing and reading recording parameters from an optical recording medium is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Applicant's admitted prior art in view of Udagawa wherein the high-frequency superimposing control section further comprises: a reference value recording section for recording the first reference value judged by the test executing section into the optical recording medium; and a data acquiring section for reading out the recorded first reference value from the optical recording medium on which the first reference value is recorded, because the Examiner takes Official Notice that storing and reading recording parameters from an optical recording medium is well known in the art (the motivation would have been, for example, to not have to re-conduct a test operation the next time the medium is used).

Regarding claim 25:

Applicant's admitted prior art in view of Udagawa discloses a semiconductor laser driving device as noted above.

Applicant's admitted prior art does not disclose wherein a wavelength of the light emitted from the semiconductor laser is between 390nm and 420 nm (the wavelength is not discussed).

The Examiner takes Official Notice that lasers of this wavelength are well known in the art of optical recording media.

It would have been obvious to one of ordinary skill at the time the invention was made to have a laser of a wavelength between 390 nm and 420 nm because the Examiner takes Official Notice that lasers of this wavelength are well known in the art (the motivation would have been to have a device compatible with media designed for these wavelengths).

Regarding claim 26:

The semiconductor laser driving device of Applicant's admitted prior art is disclosed as being used in an optical head device (specification page 2).

Regarding claim 27:

The optical head device of Applicant's admitted prior art is disclosed as being part of an optical information processing device (specification, pages 1-2).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Udagawa as applied to claim 15 above, and further in view of Sakamoto et al. (US 5,005,164).

Applicant's admitted prior art in view of Udagawa discloses a semiconductor laser driving device as discussed above.

Applicant's admitted prior art in view of Udagawa does not disclose a temperature sensor for measuring a temperature of the semiconductor laser; and a storing section for storing data indicative of a relationship of the average value, the temperature, the amplitude, and the peak-to-average ratio, wherein the high-frequency superimposing control section reads out the data from the storing section, so as to control the amplitude based on the data, the average value, and the temperature.

Sakamoto discloses a temperature sensor for measuring a temperature of the semiconductor laser, and a storing section for storing data indicative of a relationship between laser parameters and the temperature (column 15, lines 13-25). Sakamoto discloses that this allows the laser power setting means to compensate for temperature deviations (column 15, lines 13-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the Applicant's admitted prior art in view of Udagawa a temperature sensor for measuring a temperature of the semiconductor laser; and a storing section for storing data indicative of a relationship of the average value, the temperature, the amplitude, and the peak-to-average ratio, wherein the high-frequency superimposing control section reads out the data from the storing section, so as to control the amplitude based on the data, the average value, and the temperature, as taught by Sakamoto (Sakamoto teaches storing power related parameters; the specific

Art Unit: 2627

parameters, such as peak-to-average ratio, are dictated by Applicant's admitted prior art in view of Udagawa).

The motivation would have been to compensate for the temperature, as taught by Sakamoto.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Udagawa as applied to claim 15 above, and further in view of Yokoi (US 2003/0090981 A1).

Applicant's admitted prior in view of Udagawa discloses a semiconductor laser driving device as discussed above.

Applicant's admitted prior in view of Udagawa discloses that the high-frequency superimposing control section comprises a linear speed acquiring section for acquiring a linear speed of an optical recording medium from which information is to be reproduced by use of the emitted light (this is inherent, as it is necessary for writing; furthermore Udagawa discloses that the power should be adjusted based on the linear speed in column 10, lines 40-44).

Applicant's admitted prior art in view of Udagawa does not disclose wherein the high-frequency superimposing control section controls the amplitude in such a manner that the peak-to-average ratio is proportional to the square root of V/V_0 at a standard linear speed V_0 which is a standard value of the linear speed V .

Yokoi discloses that recording power should be proportional to the square root of the recording linear velocity (paragraph 87).

Art Unit: 2627

It would have been obvious to one of ordinary skill in the art to include in Applicant's admitted prior art in view of Udagawa wherein the high-frequency superimposing control section controls the amplitude in such a manner that the peak-to-average ratio is proportional to the square root of V/V_0 at a standard linear speed V_0 which is a standard value of the linear speed V (if the high-frequency amplitude is adjusted proportional to the linear velocity, as taught by Yokoi, the peak-to-average ratio changes proportionally with it).

The motivation would have been to record at the correct recording power for the linear velocity, as taught by Yokoi.

8. Claims 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Udagawa as applied to claim 15 above, and further in view of Nagara (US 6,731,584).

Regarding claim 22:

Applicant's admitted prior art in view of Udagawa discloses a semiconductor laser driving device as noted above.

Applicant's admitted prior art in view of Udagawa does not disclose "wherein the high-frequency superimposing control section comprises a data acquiring section for acquiring the first reference value by reading out, from the optical recording medium from which information is to be reproduced by use of the emitted light and on which an allowance value of the peak value of the emitted light is recorded, the recorded allowance value."

Nagara discloses a high-frequency superimposing control section which calculates amplitude by reading out, from the optical recording medium from which information is to be reproduced by use of the emitted light and on which an allowance value of the peak value of the emitted light is recorded, the recorded allowance value (column 7, lines 60 to column 8, lines 21). Nagata discloses that this decreases jitter on reproduction (column 1).

It would have been obvious to one of ordinary skill in the art to include in Applicant's admitted prior art in view of Udagawa wherein the high-frequency superimposing control section comprises a data acquiring section for acquiring the first reference value by reading out, from the optical recording medium from which information is to be reproduced by use of the emitted light and on which an allowance value of the peak value of the emitted light is recorded, the recorded allowance value, as taught by Nagata.

The motivation would have been to reduce jitter, as disclosed by Nagata.

Regarding claim 28:

This is a claim to the medium of claim 22; it is necessary for the device of Applicant's admitted prior art in view of Udagawa and further in view of Nagata to operate, so it is similarly rejected.

Conclusion

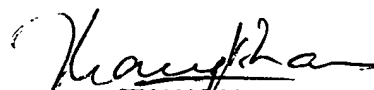
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chikugawa et al. (US 5,127,015) discloses setting high-frequency amplitude based upon peak and average power.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 6/19/06


THANG V. TRAN
PRIMARY EXAMINER